

WHAT IS CLAIMED IS:

1. A pairing apparatus for generating pairings used to hold matches of pairs of a plurality of participating teams, comprising:

5 pairing storage means for storing match results in association with the generated pairings;

 setting means for setting the number r_1 of rounds from first to (r_1) -th rounds and the number r_2 of rounds from (r_1+1) -th to r -th rounds of the matches;

10 first pairing means for sequentially or simultaneously generating pairings from the first to (r_1) -th rounds by a random system on the basis of the set number r_1 of rounds, and writing the generated pairings in the pairing storage means;

15 second pairing means for sequentially generating pairings from the (r_1+1) -th to r -th rounds by a modified Swiss system on the basis of the match results in the pairing storage means, and writing the generated pairings in the pairing storage means; and

20 output means for outputting storage contents of the pairing storage means.

2. A pairing method of controlling a pairing apparatus to generate pairings used to hold matches of pairs of a plurality of participating teams, comprising:

25 a step of controlling the pairing apparatus to set the number r_1 of rounds from first to (r_1) -th rounds

and the number r_2 of rounds from (r_1+1) -th to r -th rounds of the matches;

5 a step of controlling the pairing apparatus to sequentially or simultaneously generate pairings from the first to (r_1) -th rounds by a random system on the basis of the set number r_1 of rounds, and to hold the generated pairings;

10 a step of controlling the pairing apparatus to hold the held pairings and input match results in association with each other upon completion of matches from the first to (r_1) -th rounds;

15 a step of controlling the pairing apparatus to sequentially generate pairings from the (r_1+1) -th to r -th rounds by a modified Swiss system on the basis of the held match results, and to hold the generated pairings; and

a step of controlling the pairing apparatus to output the held contents on the basis of an input request.

20 3. A computer program stored in a computer readable storage medium used in a pairing apparatus for generating pairings used to hold matches of pairs of a plurality of participating teams, comprising:

25 a first program code of making a computer execute a pairing generation process for creating a pairing table that stores match results in association with the generated pairings and storing the pairing table in

a memory;

a second program code of making the computer
execute a setting process for setting the number r_1 of
rounds from first to (r_1) -th rounds and the number r_2
5 of rounds from (r_1+1) -th to r -th rounds of the matches;

a third program code of making the computer
execute a first pairing process for sequentially or
simultaneously generating pairings from the first to
 (r_1) -th rounds by a random system on the basis of the
10 set number r_1 of rounds, and writing the generated
pairings in the pairing table;

a fourth program code of making the computer
execute a second pairing process for sequentially
generating pairings from the (r_1+1) -th to r -th rounds
15 by a modified Swiss system on the basis of the match
results in the pairing table, and writing the generated
pairings in the pairing table; and

a fifth program code of making the computer
execute an output process for outputting contents of
20 the pairing table on the basis of an input request.

4. The program according to claim 3, wherein the
output process comprises a sixth program code of making
the computer execute a pairing communication process
for transmitting contents of the pairing table to
25 respective participating teams on the basis of address
information stored in advance for respective
participating teams.

5. The program according to claim 3, wherein the setting process includes a calculation process for, when top t teams are to be selected from a total of n participating teams, simulating pairings on the basis of ratings assigned to the participating teams under a condition that participating teams with higher ratings probabilistic win, and calculating a minimum number r_1 of rounds that does not cause any reverse phenomenon of ratings and ranks.

6. The program according to claim 5, wherein the calculation process includes a process for setting the number r_1 of rounds if the calculated number r_1 of rounds meets:

$$1 \leq r_1 \leq r - \lfloor \log_2 n \rfloor$$

7. The program according to claim 6, wherein the output process comprises a sixth program code of making the computer execute a pairing communication process for transmitting contents of the pairing table to respective participating teams on the basis of address information stored in advance for respective participating teams.